AMENDMENTS TO THE CLAIMS

The listing of claims provided below will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-26 (Cancelled)

27. (Previously Presented) A method of facilitating the extraction of a mineral extracted from an ore having a plurality of phases of materials comprising causing weakening of inter-phase boundaries by exposing said ore to microwaves for a time of less than 0.1 second, the microwaves having a high enough field strength and being applied for a short enough time to cause differential thermal expansion between materials of different phases to cause weakening between phases whilst avoiding causing significant chemical changes to the ore, or at least to the mineral to be extracted.

28. (Previously Presented) A method according to claim 27 wherein said ore is exposed to the microwaves for a time of less than 0.01 second.

29. (Canceled)

30. (Canceled)

31. (Canceled)

32. (Canceled)

33. (Canceled)

34. (Canceled)

35. (Previously presented) A method according to claim 27 wherein pulses of microwaves are emitted substantially continuously and said pulses have a duration from the group consisting of (i) of the order of 1μs or less; (ii) of the order of 10μs or less; (iii) of the order of 100μs or less; (iv) of the order of 1ms or less; and (v) of the order of 10ms or less; of the order of 100ms or less.

36. (Previously presented) A method according to claim 35 wherein said substance, whilst in said treatment area, experiences a series of pulses of energy, said series having a number of pulses selected from the group consisting of: (i) of the order of 100 pulses or more; (ii) of the order of 50 pulses or more; (iii) of the order of 10 pulses or more; (iv) of the order of 5 pulses or more; (v) of the order of 2 pulses or more; and (vi) of the order of one pulse.

37. (Previously presented) A method of increasing the yield of a mineral extracted from an ore having a plurality of phases of materials comprising causing weakening of inter-phase boundaries by exposing said ore to high field strength microwaves for a time of less than 0.1 second, the microwaves having a high enough field strength and being applied for a short enough

time to cause differential thermal expansion between materials of different phases to cause weakening between phases whilst avoiding causing significant chemical changes to the ore, or at least to the mineral to be extracted, wherein the power density produced by the microwaves in the treatment area is selected from the group consisting of the order of (i) $10^{15}Wm^{-3}$ or more; and (ii) $10^{16}Wm^{-3}$ or more, further wherein pulses of microwaves are emitted substantially continuously and said pulses have a duration from the group consisting of (i) of the order of 1μs or less; (ii) of the order of 10μs or less; (iii) of the order of 100μs or less; (iv) of the order of 1ms or less; and (v) of the order of 10ms or less; (vi) of the order of 100ms or less, and further wherein said ore, whilst in said treatment area, experiences a series of pulses of energy, said series having a number of pulses selected from the group consisting of: (i) of the order of 100 pulses or more; (ii) of the order of 50 pulses or more; (iii) of the order of 10 pulses or more; (iv) of the order of 5 pulses or more; (v) of the order of 2 pulses or more; and (vi) of the order of one pulse.

38. (Canceled)

39. (Canceled)

40. (Canceled)

41. (Canceled)

42. (Currently Amended) A method of microwave treatment of a multi-phase material for facilitating the extraction of one phase of the material from another phase of the material, the method comprising heating said material with microwaves, producing a power density of at least $10^9 Wm^{-3}$ in a continuous process in which said material moves into and through a microwave treatment area and experiences exposure to said microwaves in said treatment area for a time of the order of ½ second or less, said time being a short enough time to avoid causing substantial chemical changes to said phase of said multi-phase material that is to be extracted, wherein said material experiences microwaves in said treatment area for a time selected from the group consisting of: (i) of the order of 0.1 second or less; (ii) of the order of 0.01 second or less; and (iii) of the order of 0.001 second or less, ~~A method according claim 34~~ wherein said one phase comprises a desired mineral and said another phase comprises a rock substrate surrounding said mineral, and wherein said microwaves significantly weakens the bond strength between said mineral and said surrounding substrate by causing local differential thermal expansion.

43. (Previously presented) A method according to claim 42 wherein said microwaves are applied to said material for a short enough time to avoid causing substantial chemical changes to (i) said mineral; and/or (ii) both said material and substrate, that would detrimentally influence the efficiency of subsequent separation of said mineral and substrate.

44-56. (Canceled)